

CLAIM OR CLAIMS

1. A vehicular weatherseal comprising a rigid polymeric backbone having a flange engaging channel and an inverted window receiving channel, the window receiving channel defined in cross section by a transition leg, an exterior leg and a window channel closed end interconnecting the transition leg and the exterior leg, the window channel closed end being curvilinear.

2. The vehicular weatherseal of Claim 1, wherein the window channel closed end has an inner radius of curvature to thickness ratio greater than approximately 1.

3. The vehicular weatherseal of Claim 1, wherein the window channel closed end has an inner radius of curvature to thickness ratio greater than approximately 1.5.

4. The vehicular weatherseal of Claim 1, wherein the window channel closed end has an inner radius of curvature to thickness ratio less than approximately 2.5.

5. The vehicular weatherseal of Claim 1, wherein the window channel closed end is defined by a varying radius of curvature.

6. The vehicular weatherseal of Claim 5, wherein the window channel closed end is defined by a constant wall thickness.

7. The vehicular weatherseal of Claim 5, wherein the cross section of the backbone includes a linear segment and a curvilinear segment, a length of the linear segment being less than a length of the curvilinear segment.

8. The vehicular weatherseal of Claim 1, wherein the window channel closed end has a constant first radius of curvature.

9. The vehicular weatherseal of Claim 1, wherein the flange engaging channel is defined in cross section by the transition leg, an interior leg and a flange channel closed end connecting the transition leg to the interior leg, the flange channel closed end being curvilinear.

10. The vehicular weatherseal of Claim 9, wherein the flange channel closed end has an inner radius of curvature to thickness ratio greater than approximately 1.

11. The vehicular weatherseal of Claim 9, wherein the flange channel closed end has an inner radius of curvature to thickness ratio greater than approximately 1.5.
12. The vehicular weatherseal of Claim 9, wherein the flange channel closed end has an inner radius of curvature to thickness ratio less than approximately 2.5.
13. The vehicular weatherseal of Claim 9, wherein the flange channel closed end is defined by a varying radius of curvature.
14. The vehicular weatherseal of Claim 9, wherein the flange channel closed end is defined by a constant wall thickness.
15. The vehicular weatherseal of Claim 9, wherein the flange channel closed end has a constant second radius of curvature.
16. The vehicular weatherseal of Claim 9, wherein the window channel closed end has a constant first radius of curvature and the flange channel closed end has a constant second radius of curvature.
17. The vehicular weatherseal of Claim 9, wherein the window channel closed end has a first radius of curvature and the flange channel closed end has a different second radius of curvature.
18. The vehicular weatherseal of Claim 1, wherein the polymeric backbone is free of structural metal.
19. The vehicular weatherseal of Claim 1, wherein the polymeric backbone includes an elongation reducing member, the elongation reducing member increasing rigidity of the backbone in only a single dimension.
20. The vehicular weatherseal of Claim 1, further comprising a sealing lip integrally connected to the backbone and projecting into the window receiving channel.
21. The vehicular weatherseal of Claim 1, wherein the backbone defines a curvilinear cross section, having at least one inflection point.
22. The vehicular weatherseal of Claim 21, wherein the inflection point is located within a linear segment of the cross section of the backbone.

23. The vehicular weatherseal of Claim 1, further comprising a trim lip connected to the backbone and extending from the backbone.

24. The vehicular weatherseal of Claim 1, wherein the backbone has a hardness of at least 40 Shore D.

25. The vehicular weatherseal of Claim 1, wherein the backbone is monolithic.

26. The vehicular weatherseal of Claim 1, wherein the backbone is selected to provide an unsupported operable length of the weatherseal.

27. The vehicular weatherseal of Claim 1, wherein a length of the backbone defines the window receiving channel to extend about three mutually perpendicular axes.

28. The vehicular weatherseal of Claim 1, further comprising a sealing lip connected to the backbone and extending into the window receiving channel, the sealing lip having a different hardness than the backbone.

29. The vehicular weatherseal of Claim 1, wherein a radius of curvature of the window channel closed end is less than an arc length of the window channel closed end.

30. The vehicular weatherseal of Claim 1, wherein the backbone includes a TPE.

31. The vehicular weatherseal of Claim 1, wherein the backbone is free of structural metal.

32. A method of forming a vehicular weatherseal comprising:

(a) forming a polymeric backbone having a flange engaging channel and an inverted window receiving channel, the window receiving channel defined by a transition leg, an exterior leg and a window channel closed end interconnecting the transition leg and the exterior leg, the window channel closed end being curvilinear; and

(b) bonding a sealing lip to the backbone to locate a portion of the sealing lip within the window receiving channel.

33. The method of Claim 32, further comprising bonding sealing lip to the backbone to locate a portion of the sealing lip within the window receiving channel.

34. The method of Claim 32, wherein bonding the sealing lip to the backbone includes extruding the sealing lip with the backbone.

35. The method of Claim 32, wherein bonding the sealing lip to the backbone includes coextruding the sealing lip and the backbone.

36. The method of Claim 32, wherein bonding the sealing lip to the backbone includes simultaneously extruding the sealing lip and the backbone.

37. The method of Claim 32, further comprising forming the sealing lip of a lower durometer than the backbone.

38. The method of Claim 32, wherein forming the polymeric backbone includes extruding a polymeric material.

39. The method of Claim 32, wherein forming the polymeric backbone includes molding a polymeric material.